

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for the heat treatment of solids containing iron oxide, in which fine-grained solids are heated to a temperature of about 450 to 950°C in a fluidized-bed reactor, ~~wherein comprising introducing a first gas or gas mixture is introduced from below into a mixing chamber region of the reactor through at least one~~ [[a]] preferably central gas supply tube into a mixing chamber of the reactor located above the upper orifice region of the gas supply tube, the at least one gas supply tube being at least partly surrounded by a stationary annular fluidized bed which is fluidized by supplying fluidizing gas, wherein the gas flowing through the at least one gas supply tube entrains solids from the fluidized bed into the mixing chamber when passing through the upper orifice region of the at least one gas supply tube, and adjusting the gas velocities of the first gas or gas mixture and of the fluidizing gas for the annular fluidized bed are adjusted such that the Particle-Froude-Numbers in the at least one gas supply tube are between 1 and 100, in the annular fluidized bed between 0.02 and 2, and in the mixing chamber between 0.3 and 30.

2. (currently amended) The method as claimed in claim 1, wherein the Particle-Froude-Number in the at least one gas supply tube is between 1.15 and 20,~~in particular about 10-6.~~

3. (currently amended) The method as claimed in claim 1 wherein the Particle-Froude-Number in the annular fluidized bed is between 0.115 and 1.15,~~in particular about 0.28.~~

4. (currently amended) The method as claimed in claim 1, wherein the Particle-Froude-Number in the mixing chamber is between 0.37 and 3.7,~~in particular about 1-1.~~

5. (currently amended) The method as claimed in claim 1, wherein the bed height of solids in the reactor is adjusted such that the annular fluidized bed at least partly extends beyond the upper orifice end of the at least one gas supply tube and solids are constantly introduced into the first gas or gas mixture and are entrained by the gas stream to the mixing chamber located above the orifice region of the gas supply tube.

6. (currently amended) The method as claimed in claim 1, wherein the solids containing iron oxide are iron-oxide-containing ore, ~~in particular iron ore or iron ore concentrate is used as starting material.~~

7. (currently amended) The method as claimed in claim 1, wherein the fluidizing gas introduced into the annular fluidized bed of the reactor is a preheated reduction gas which contains at least 80 % hydrogen, ~~in particular more than 90 % hydrogen.~~

8. (previously presented) The method as claimed in claim 7, wherein the reduction gas is cleaned in a reprocessing stage downstream of the reactor and is subsequently recirculated to the reactor.

9. (currently amended) The method as claimed in claim 1, wherein downstream of the reactor ~~another~~ a second fluidized-bed reactor is provided, whose the exhaust gases from which are separated from solids in a separator and are introduced into the at least one gas supply tube of the reactor.

10. (previously presented) The method as claimed in claim 1, wherein upstream of the reactor at least one preheating stage is provided for heating the solids.

11. (currently amended) A plant for the heat treatment of solids containing iron oxide, ~~in particular for performing a method as claimed in claim 1, comprising a reactor constituting a fluidized bed reactor, wherein the reactor has a gas supply system~~ comprises at least one gas supply tube at least partly surrounded by an annular chamber in which a stationary annular fluidized bed is located, and a mixing chamber being located above the upper orifice region of the at least one gas supply tube, which is formed such that wherein the gas flowing through the at least one gas supply tube system entrains solids from [[a]] the stationary annular fluidized bed, which at least partly surrounds the gas supply system, into the mixing chamber when passing through the upper orifice region of the at least one gas supply tube.

12. (currently amended) The plant as claimed in claim 11, wherein the gas ~~supply system has~~ at least one gas supply tube ~~which extends upwards substantially vertically from the lower region of the reactor into [[a]] the mixing chamber of the reactor, the gas supply tube being at least partly surrounded by an annular chamber in which the stationary annular fluidized bed is formed.~~

13. (currently amended) The plant as claimed in claim 11 12, wherein the gas supply tube is arranged approximately centrally with reference to the cross-sectional area of the reactor.

14. (currently amended) The plant as claimed in claim 11, wherein the gas supply tube has openings, ~~for instance in the form of slots; at its shell surface.~~

15. (currently amended) The plant as claimed in claim 11, ~~wherein further comprising a cyclone for separating solids is provided downstream of the reactor, and wherein the cyclone has a solids conduit leading to the annular fluidized bed of the reactor (+).~~

16. (currently amended) The plant as claimed in claim 11, ~~wherein further comprising a gas distributor~~ in the annular chamber of the reactor ~~a gas distributor is provided~~, which divides the chamber into an upper fluidized bed region and a lower gas distributor chamber, ~~and wherein the lower~~ gas distributor chamber is connected with a supply conduit for fluidizing gas.

17. (currently amended) The plant as claimed in claim 11, wherein the reactor has a supply conduit for hydrogen-containing reduction gas, which leads to the at least one gas supply tube and is connected ~~for instance~~ with the exhaust gas outlet of a separator of ~~another a second~~ reactor downstream of the reactor, and/or the reactor has a supply conduit for preheated hydrogen-containing reduction gas, which leads to the annular chamber.

18. (previously presented) The plant as claimed in claim 11, wherein a preheating stage for the solids is provided upstream of the reactor.